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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,443	12/05/2003	Charles Michael Webre	FRK-108-1	9370

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EXAMINER

BOMAR, THOMAS S

ART UNIT	PAPER NUMBER
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3672

DATE MAILED: 09/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/728,443

Applicant(s)

WEBRE ET AL.

Examiner

Shane Bomar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-5,10 and 12-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22-24 and 28 is/are allowed.
- 6) ☒ Claim(s) 1,3-5,10,12,13,16-19 and 25-27 is/are rejected.
- 7) ☒ Claim(s) 14,15,20 and 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/18/04.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

FA

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 8. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "5" has been used to designate both a computer cell in Figure 7 and an unknown element in Figure 2. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the

examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities: a) on pages 3 and 4, both the receiver and housing have been given reference numeral 11; and b) on page 13, both the flexible hose and internal slips have been given reference numeral 58.

Appropriate correction is required.

Claim Objections

4. Claims 1, 3-5, 10, 12, 13, 16-18, 22, 25, 27, and 28 are objected to because of the following informalities: a) in the preambles of claims 1 and 12, the recitation of “the rig elevator” should be --a rig elevator--; b) in the preambles of claims 3 and 10, the recitation of “the rig elevator” should most likely be --a drilling rig elevator--, and the subsequent recitation of “a drilling rig elevator” in the body of the claims should most likely be --the [or said] drilling rig elevator--; c) in the body of claims 3, 4, 10, 25, and 28, the recitation of “characteristics [or surface] of tubular extending” should, depending on the claim, most likely be --characteristics [or surface] of the [or said] tubular--; d) in the last two lines of claim 3, the recitation of “of a said feature” should be --of said feature--; e) in line 9 of claim 10, the recitation of “characteristic” should be made plural; f) in the preamble of claim 12, the recitation of “smaller than an” should be --smaller than an--; throughout claims 13 and 27, the recitation of “an” should be removed in the recitations of “said an insertable oil field assembly” and “said rig suspended

an insertable oil field assembly”; g) claims 16 and 17 should most likely depend from claim 13, otherwise there are antecedent basis problems in these claims; h) in line 5 of claim 18, the recitation of “said oil field tool” should be --said oil field assembly--; i) the recitation of “said rig suspension system” in line 3 of claim 22 lacks proper antecedent basis; j) the recitation of “the rig” in line 8 of claim 25 lacks proper antecedent basis; k) the recitation of “form the lower end” in line 10 of claim 27 should be --from the lower end--; l) the recitation of “said reflecting surface” in line 12 of claim 27 should most likely be --said first reflecting surface-- to remain consistent with the previous recitation; m) the recitation of “the rig” in line 11 of claim 28 lacks proper antecedent basis; and n) the recitation of “said sensor” in claim 5 should most likely be --said sensors--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by US patent 3,881,375 to Kelly.

Regarding claims 1 and 12, Kelly discloses a tubular string feature locator for detecting when a selected characteristic on a tubular string P suspended in a well has a preselected vertical

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relationship to a rig elevator T (the tongs T are seen as an elevator because, through the attachment to column 10, the pipe string is lowered and/or elevated while gripped by the tongs; also see col. 2, lines 17-19), the locator comprising: sensor means M to detect at least one characteristic of the tubular that has a known vertical relationship to a location on the tubular selected for gripping with elevator mounted tubular gripping means 26a, 30a and to produce an output signal when the characteristic is sensed (see Figs. 1-2 and col. 1, line 51 through col. 2, line 7); a sensor mounting arrangement that places the sensor means the same distance and direction from the elevator tubular gripping means as the known distance and direction between the characteristic to be sensed and the location on the tubular selected for gripping (see Figs. 1, 2, and 4). Furthermore, the outside diameter of the tubular is smaller than an outside diameter of a collar J attached to the tubular, wherein means M detects a position (i.e., the shoulders 122a and 124a) of said collar that has a known vertical relationship to a location on the tubular selected for gripping with an elevator mounted tubular gripping assembly T and to produce an output signal when the characteristic is sensed (see Figs. 2 and 4).

7. Claims 1, 3-5, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by US patent 6,073,699 to Hollingsworth, Jr.

Regarding claims 1, 3, 4, and 12, Hollingsworth discloses a tubular string feature locator for detecting when a selected characteristic on a tubular string 48 suspended in a well has a preselected vertical relationship to a rig elevator 10, the locator comprising: a plurality of sensor means 46 to detect at least one characteristic of the tubular that has a known vertical relationship to a location on the tubular selected for gripping with elevator mounted tubular gripping means and to produce an output signal when the characteristic is sensed, wherein the sensors are

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mechanical elements extending to the surface of the tubular (see Figs. 2-3, col. 3, lines 10-32, and claims 1-3); a sensor mounting arrangement that places the sensor means the same distance and direction from the elevator tubular gripping means as the known distance and direction between the characteristic to be sensed and the location on the tubular selected for gripping (see Fig. 2 and col. 3, lines 12-20). Furthermore, the outside diameter of the tubular is smaller than an outside diameter of a collar attached to the tubular, wherein means 46 detects a position of said collar that has a known vertical relationship to a location on the tubular selected for gripping with an elevator mounted tubular gripping assembly and to produce an output signal when the characteristic is sensed (see Fig. 2 and col. 3, lines 10-32).

Regarding claim 5, the function of the sensors is achieved by the arrangement of at least two vertically adjacent sensors on different vertical locations (see Fig. 2). It is noted that this claim is a product-by-process claim, therefore it is Office Policy to consider any limitations following the recitation of "by which process..." to be purely functional and that the prior art only need disclose an apparatus that is capable of performing the claimed function, or process.

8. Claims 1, 3, 12, 13, 17-19, and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by US patent 6,626,238 to Hooper.

Regarding claims 1 and 12, Hooper discloses a tubular string feature locator for detecting when a selected characteristic on a tubular string 6 suspended in a well has a preselected vertical relationship to a rig elevator 20, the locator comprising: sensor means 31, 32 to detect at least one characteristic of the tubular that has a known vertical relationship to a location on the tubular selected for gripping with elevator mounted tubular gripping means 21 and to produce an output signal when the characteristic is sensed (see Figs. 1 and 4 and col. 4, lines 7-39); a sensor

mounting arrangement that places the sensor means the same distance and direction from the elevator tubular gripping means as the known distance and direction between the characteristic to be sensed and the location on the tubular selected for gripping (see Figs. 1 and 5, and col. 7, lines 22-25). Furthermore, the outside diameter of the tubular is smaller than an outside diameter of a collar 7 attached to the tubular, wherein means 31, 32 detects a position of said collar that has a known vertical relationship to a location on the tubular selected for gripping with an elevator mounted tubular gripping assembly and to produce an output signal when the characteristic is sensed (see Figs. 4 and 5).

Regarding claim 3, Hooper discloses a tubular string feature locator for detecting the vertical position of a tubular string 6 suspended in a well relative to a drilling rig elevator 20, the locator comprising: the drilling rig elevator to function as a carrier for tubular feature sensors 31 and 32 and related mounting means (see Fig. 4); a plurality of said tubular feature sensors 31 and 32 mounted on said elevator and arranged to sense selected characteristics of the tubular extending through the elevator and to produce an output signal component indicative of the presence of the selected tubular characteristics; and the total of said signal components to comprise a signal to indicate the presence of a said feature (see Figs. 4-6 and col. 7, lines 17-22, wherein the sensors act together to perform the sensing function; therefore the total of the signal component from each sensor indicates the presence of the collar).

Regarding claims 13, 18, and 27, Hooper similarly discloses an apparatus for indicating a desired position of a suspended insertable oil field assembly 6 capable of being lowered into a tubular 50 comprising: a traveling block 3 from which are suspended at least two bails 5 having first and second lower ends respectively; an elevator 20 fixedly attached to said bails; an

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insertable oil field assembly 6, having a lower end, suspended from said traveling block, whereby said traveling block insertably lowers said insertable oil field assembly into a tubular 50 positioned below said traveling block, wherein said insertable oil field assembly has a first reflecting surface 7 disposed about said insertable oil field assembly at a pre-determined distance from the lower end of said insertable oil field assembly, wherein the surface 7 must inherently be reflective, else the sensor would continue to “see” right through the coupling 7 and thus the sensor would never be able to detect its presence; and a sensor 31, 32, capable of emitting a signal to be reflected by said first reflecting surface disposed about said an insertable oil field assembly, wherein the reflected signal indicates the position of said insertable oil field assembly relative to said tubular (see Figs. 1, 1a, and 4). The position of the assembly 6 will be indicated as it is related to the tubular 50 because, as is notoriously known in the art, the lengths of pipe joint 6 will be substantially the same for any given job and will be placed in the tubular 50 at substantially the same height each time a joint 6 is to be inserted. Therefore, when the sensors detect the coupling 7, the operator, or anyone standing on-site, as can be seen in Figure 1a, will inherently know the distance from the coupling to the tubular 50. Hooper, in describing the operation of the invention, also similarly discloses an inherent method for indicating the desired position of the oil field assembly 6 inserted into tubular 50.

Regarding claim 17, as understood to depend from claim 13, the sensor is mounted on the elevator 20 (see Fig. 4).

Regarding claim 19, said sensor and said reflecting surface are substantially aligned in the same horizontal plane (see Fig. 5).

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9. Claims 25 and 26 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hooper.

Regarding claim 25, Hooper discloses, as similarly shown in claims 13 and 18 above, a tubular string feature and position locator for detecting the vertical position of a tubular suspended in a well bore comprising: a drilling elevator 20 to function as a carrier for sensors 31, 32 and related mounting apparatus; and at least one sensor 31 or 32 mounted on said elevator arranged to sense the position of an insertable oil field assembly 6 suspended, for insertion into said tubular 50, from the rig and being lowered substantially in tandem with said elevator, said sensor being capable of producing an output signal indicative of the position of the suspended insertable oil field assembly relative to said tubular (see specific references to figures and specification above). Although it would be inherent that the same elevator and sensors 31 and 32 could sense a characteristic of the tubular 50 as is done for the assembly 6, it is not specifically taught that this occurs. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, that at least one sensor 31 or 32 mounted on said elevator is arranged to inherently sense selected characteristics of the tubular 50 extending through the elevator and to inherently produce an output signal indicative of the presence of selected tubular characteristics. One would have been motivated to make such an assertion since it is notoriously known in the art that the tubular, such as casing, 50 could have been lowered into the ground by the same elevator and sensors used to lower the assembly 6, and because the casing, as is also well known, could be assembled in sections and the joint of each of the sections would need to be detected by the elevator prior to gripping, lowering, and assembly of the string of casing.

Regarding claim 26, at the time the invention was made, it would have also been obvious to one of ordinary skill in the art that the sensors could be mounted in a single housing to protect them from falling objects or debris, as such are notoriously known in the art to occur. Also, it is apparent from Figures 4 and 5 that the sensors are mounted to a single mounting plate, therefore a single, annular-type housing would not difficult to assemble or manufacture to provide said protection. Furthermore, the signal from the sensors is processed in signal box 40 to indicate the characteristics and position of the tubular (see col. 6, lines 44-50).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hooper in view of US patent 6,558,241 to Hergott et al.

Hooper teaches a tubular string feature locator for detecting the vertical position of a tubular string 6 suspended in a well relative to a drilling rig elevator 20, the locator comprising: the drilling rig elevator to function as a carrier for tubular feature sensors 31 and 32 and related mounting means (see Fig. 4); at least one of said tubular feature sensors 31 and 32 mounted on said elevator and arranged to sense selected characteristics of the tubular extending through the elevator and to produce an output signal indicative of the presence of the selected tubular characteristics (see the rejection of claim 3 above). However, it is not expressly taught that the sensor emits sound to travel through the airspace surrounding the tubular to impinge upon the surface of the tubular, and respond to airborne echo characteristic to determine the distance between reference features on the tubular, and the sensor, said output signals from each sensor being processed to produce sensed tubular feature related information.

Hergott et al teach a tubular string feature locator sensor similar to that of Hooper. It is further taught that the sensor 34 emits sound (i.e., ultrasound) to travel through the airspace surrounding the tubular 30 to impinge upon the surface of the tubular, and respond to airborne echo characteristic to determine the distance between reference features on the tubular, and the sensor, said output signals from each sensor being processed to produce sensed tubular feature related information (see col. 3, lines 48-53). It would have been obvious to one of ordinary skill in the art, having the teachings of Hooper and Hergott et al before him at the time the invention was made, to modify the sensor taught by Hooper to include the ultra sound sensor of Hergott et al, in order to obtain diametric data from the tubular. One would have been motivated to make such a combination because the references address the narrow problem of determining the exterior characteristics of a tubular member, whether it be a tubular sausage or a tubular string, a

person seeking to solve that exact problem would consult the references and apply their teachings together. Also, Hergott et al teach that optical and ultra sound-type sensors are notoriously known as being interchangeable when sensing tubular characteristics.

13. Claim 16, as best understood to depend from claim 13, is rejected under 35 U.S.C. 103(a) as being unpatentable over Hooper in view of Hollingsworth, Jr.

Hooper teaches the apparatus of claim 13 that includes a sensor mounted on an elevator. However, it is not taught that the sensor can be mounted on the bails of the elevator.

Hollingsworth teaches an apparatus with a sensor for detecting characteristics of a tubular similar to that of Hooper. It is further taught that the sensors can be on the elevator or the bails (see col. 3, line 29). It would have been obvious to one of ordinary skill in the art, having the teachings of Hooper and Hollingsworth before him at the time the invention was made, to modify the apparatus taught by Hooper to include the bail mounted sensor of Hollingsworth. One would have been motivated to make such a combination since Hollingsworth has shown it to be notoriously known in the art that tubular sensors can be mounted on either elevators or bails and still serve the same function.

Allowable Subject Matter

14. Claims 22-24 and 28 are allowed since the prior art of record, either alone or in combination, fails to teach or suggest a sensor that includes a housing, a signal emitter and receiver, a cover, and an air supply to prevent substance accumulation, nor is it taught or suggested that a tubular string feature locator has the sensors on both the elevator and the bails that suspend the elevator from the traveling block, as is currently claimed.

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15. Claims 14, 15, 20, and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

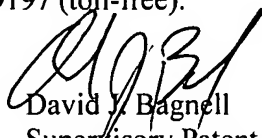
Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Alexander, Hauldren, Lofgren, and Wilkinson teach other tubular sensors of particular interest.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shane Bomar whose telephone number is 571-272-7026. The examiner can normally be reached on Monday - Thursday from 7:00am to 4:30pm. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


David J. Bagnell
Supervisory Patent Examiner
Art Unit 3672

tsb 
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